

Howarth

Use of multiple lines of evidence is a strength.

Assumptions in criteria document well supported with literature.

Surprised that load-based criteria are not used but says that the report convinces him that "criteria based on total nitrogen can be powerful and protective"

"The relationship between total nitrogen and chlorophyll is very strong (page 30), and provides a robust approach for setting a total nitrogen criteria." Notes that relationship with inorganic nitrogen is less strong, but nonetheless strong.

Report is convincing "that eelgrass has declined significantly in Great Bay since 1996"

Relationship between chl-a or nitrogen and low DO are strong and use of DO to set criteria is warranted

Boynton

Use of multiple lines of evidence is "very reasonable"

"Well-grounded analysis" and approaches used were "solid"

"There is a strong conclusion that N was the limiting nutrient and the only one of consequence. I think they should do a bit more on this issue. I think they are correct but they do not have definitive evidence and they do indicate (correctly I think) that P is important in lakes and rivers." Points out risk of single nutrient strategy.

Calculation of nutrients in phytoplankton from biomass and published percentages is weak

Suggests use of bioassays over N:P ratios for assessment of N limitation because ratios are not as strong

Finds issue with idea that phytoplankton are such a small part of TN

"I find the approach, methods, and analyses used to reach conclusions solid"

Timeline

Date	Action	Other Information
Jun-08	NHDES publishes draft "Methodology and Assessment Results related to Eelgrass and Nitrogen in the Great Bay Estuary for Compliance with Water Quality Standards for the New Hampshire 2008 Section 303(d) List"	
11/25/08	Al Basile sends EPA comments on proposed nutrient criteria to NHDES	
03/11/09	Nature Conservancy sends comments to NHDES on 12-30-2008 draft criteria	
03/13/09	William H. McDowell of UNH sends comments to NHDES on 12-30-2008 draft criteria	
03/18/09	Frederick T. Short of UNH sends comments to NHDES on 12-30-2008 draft criteria	
03/19/09	R1 sends comments to NHDES on 12-30-2008 draft criteria	
03/19/09	W. Steven Clifton of Underwood Engineering sends comments on 12-30-2008 draft criteria	
03/20/09	Conservation Law Foundation sends comments to NHDES on 12-30-2008 draft criteria	
03/20/09	James Stahlnecker sends his and Tom Danielson's (Maine DEP) comments to Phil Trowbridge	
03/20/09	City of Portsmouth sends letter to NHDES with review of the Great Bay draft criteria by Brown and Caldwell, as well as by Applied Science Associates	City notes intent to form coalition with other towns. Asserts that criteria are "arbitrary and unsupported by science". Request additional studies
06/10/09	NHDES posts updated version of proposed numeric nutrient criteria for Great Bay Estuary	
04/09/10	Cities of Dover, Durham, Exeter, Newmarket, and Rochester send letter to NHDES	
05/14/10	NHDES responds to above letter	NHDES reaffirms their confidence in N-seagrass loss link. Note that peer review through N-STEPS has been initiated and that it is an independent process.
Late May-Early June 2010	Peer reviewers provide reviews	

06/29/10	R1 transmits N-STEPS peer review to NHDES	Noted that not a public peer review. Also noted that this peer review is only one component in the materials needed to develop criteria and is "not intended to finally or comprehensively resolve the many complex issues concerning the development of nutrient criteria and the implementation of nutrient controls for Great Bay."
03/03/11	NHDES comments on Hydroqual's technical memo	
03/16/11	R1 responds to letter from town of Durham, NH	
03/25/11	EPA proposes N limits for town of Exeter's wastewater discharge to Squamscott River	
04/04/11	Congressman Frank Guinta sends letter to Lisa Jackson.	Asks EPA to delay permit action (particularly in Exeter) until peer review is completed. Also asks for information about the flexibility that a state has in limiting point source contributions.
04/12/11	Congressman Frank Guinta introduces a bill to the US House of Representatives to delay enforcement and establishment of criteria in Great Bay Estuary	
05/06/11	NHDES releases draft MOA	Says that there is uncertainty in role of N and eutrophication in eelgrass loss. As a result NHDES commits to delaying implementation of permits, further study role of N in eelgrass loss, and use multiple lines of evidence to determine the role of N in eelgrass loss. Coalition agrees to make a mechanistic model of the Bay.
05/19/11	Town of Newington sends letter NHDES expressing opposition to MOA limit of 8 mg/L for wastewater discharges	
05/25/11	Conservation Law Foundation sends letter to NHDES expressing concern about MOA	
06/09/11	Lisa Jackson sends letter to NH governor in response to April 18, 2011 letter	Reaffirms need for N limits for Exeter
06/16/11	Hydroqual submits a technical memo outlining scope of work for modeling in Great Bay Estuary	
06/17/11	Steve Silva sends update on N pollution and permitting in Great Bay.	Requests help with review of scope of work document from Hydroqual